# The HSU CIRM Bridges to Stem Cell Research Certificate Program

## Grant Award Details

The HSU CIRM Bridges to Stem Cell Research Certificate Program

**Grant Type:** Bridges

**Grant Number:** TB1-01190

**Project Objective:** Provide a training program for undergraduates.

**Investigator:**

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| **Name:** | Jacob Varkey |
| **Institution:** | Humboldt State University |
| **Type:** | PI |

**Award Value:** $3,195,858

**Status:** Closed

## Grant Application Details

**Application Title:** CIRM Bridges to Stem Cell Research Certificate Program

**Public Abstract:** We are proposing a certificate program in stem cell biology research and regenerative medicine at our institution. Our objective is to train up to 30 students from diverse socioeconomic and ethnic background in the modern aspects of stem cell biology, it implications in regenerative medicine, and social and ethical issues in the use of stem cell technology. Specifically, the program will have two components. Students from our university will take the courses we offer in cellular and molecular biology. They will also complete at least one semester of independent research, which will enhance their training in experimental research design, basic methods, and good laboratory practices. The next phase of the program will require training in embryonic stem cell laboratory techniques at either [REDACTED] or [REDACTED], our “host” institutions. Up to ten undergraduates/year for three years will be selected to participate in a 12 month research internship at either [REDACTED] or at [REDACTED]. In preparation for these internships, trainees must show outstanding achievement in cellular and molecular biology coursework and aptitude in laboratory skills required to perform state of the art research techniques required in stem cell research. A general education course in Stem Cell Biology and Regenerative Medicine will be developed and offered to nonscience majors at our campus and at our local community college. A seminar series featuring researchers in the field from each host institution will be offered to our students and to the local medical community We will offer a weekend workshop in stem cell biology and research to biology educators in our community. Our efforts will help create a diverse, highly qualified work force in stem cell biology and an educated public prepared to benefit from the research our trainees contribute to.

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| **Statement of Benefit to California:** | Human embryonic stem cell biology has become an important component of biotechnology research. Scientists have predicted stem cells could be used to treat a myriad of ailments, including diabetes, neurological disorders, and multiple kinds of cancers. California has demonstrated support for this research by passing Proposition 71 to fund the California Institute for Regenerative Medicine (CIRM). Because of CIRM, cutting edge stem cell research is taking place in California. This research requires highly competent technicians and researchers to perform the laboratory work. Our program is designed to provide California students from diverse socioeconomic and ethnic backgrounds with comprehensive training in the modern aspects of stem cell biology, it implications in regenerative medicine, and social and ethical issues in the use of stem cell technology. Upon completion of coursework in genetics, cell biology, developmental biology, and stem cell laboratory methods, students will complete their training at at one of two "host" stem cell research centers: [REDACTED or at [REDACTED]. They will begin their training at these sites by taking a course in human embryonic stem cell research techniques. After completion of this course, they will participate in a 12 month research internship in a stem cell biology research laboratory. In addition to training students for careers in stem cell biology and regenerative medicine, we will increase the awareness of stem cell biology and regenerative medicine in our community by offering general education courses for non-science majors, by providing seminars, workshops, and grand rounds to local educators and medical professionals, and by sending our students into local high school classrooms to talk with students about stem cell biology and regenerative medicine. Our efforts will help create a diverse, highly qualified work force in stem cell biology and an educated public prepared to benefit from the research our trainees contribute to. |

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